

Claims

There is claimed:

In an externally winged craft having a fuselage and means for providing lift and propulsion for the aircraft, the improvement wherein an internally disposed swirl vane that is a wing within a wing essentially unobstructed within a substantially horizontal hyperbolic egg-shaped vortex amplification chamber or opening disposed in a rotational convergence zone extending through the main wing structure forms said propulsion that is a suction-head or vortex flow such that the hyperbolic swirl chamber or vortex generator, a swirl-vane forms said means for providing lift and propulsion and a means for cooling the aircraft by producing a thermoacoustic cooling effect thereby setting into motion a refrigerated effect which may occur by the compression and expansion of atmospheric gas for the aircraft and provide an internal wing chamber and swirl vane or wing within a wing thereof, wherein the fuselage has opposed forward, lateral and rear ends intersected by said hyperbolic vortex chamber disposed within said vortex convergence zone such that the passage or input element opens forward, and through the upper and lower surfaces of the aircraft's main wing structure wherein the architecture of the wing characterized as being formed by a single portion of the wing and strategically positioned vortex swirl-vane beginning in the optimal tangent point disposed in the convergence zone of the hyperbolic egg-shaped chamber or labyrinth located within the main wing structure.

The aircraft and invention of claim 1 further comprising propulsion means for forming a at least a portion of a rearward directed air stream in addition a preferred and improved use of environmental energy thereby forming a vortex flow or suction head so as to propel the aircraft; and means for directing a greater portion of the air stream passing through said hyperbolic chamber and vortex convergence zone whereby the aircraft is propelled forward by the Implosion that is a vacuum, vortex flow or suction head and thereby causing thermoacoustic cooling of the craft by compression and expansion of gases.

The invention and aircraft of claim 2 wherein the means for directing at least a portion of said air stream through the selectively shaped hyperbolic shaped horizontal vortex flow chamber comprises: means forming a tangential zone in portions of the fuselage underlying the section of the wing that is open to the environment that is said horizontal vortex flow chamber near the forward end of the aircraft communicating with the vortex flow through the horizontal orifice and input elements and main wing sections through a horizontal orifice formed in the floor of the lifting wing and extending through the wing to the upper most surface thereby forming a hyperbolic vortex chamber and means for diverting at least a portion of said air stream into the tangential zone giving rise to a pressure gradient in the air stream's convergence zone, which result in the formation of thermoacoustic cooling.

The invention or aircraft of claim 1 wherein the vortex generator comprises a transverse flap forming a portion of the main wing section adjacent the forward end of the aircraft, said flap pivotally connected at the side thereof nearest the beginning of the hyperbolic vortex chamber of the fuselage hinged about a transverse axis; and means for pivoting said flap.

The aircraft and invention of claim 1 wherein the hyperbolic vortex chamber and vortex generator has a first portion extending longitudinally along one side of the vortex generator lifting wing-let or swirl-vane and a second portion extending longitudinally along the opposite side of the ellipsoidal egg-shaped hyperbolic vortex chamber, the first and second portions of the hyperbolic chamber meeting at a negative dihedral at the center of the hyperbolic vortex flow chambered vortex generator.

The aircraft of claim 1 wherein portions of the fuselage forming the hyperbolic chamber of the vortex generator at the front-end of the aircraft are formed into two transversely extending, pivotable flaps and portions of the fuselage forming the vortex generators and hyperbolic chambers at the front-end of the aircraft and disposed therein the vortex generators are formed into two transversely extending, pivotable flaps so as to provide pitch and roll control for the aircraft.

The aircraft of claim 1 further comprising a plurality of horizontally extending internal rudders pivotally mounted within the hyperbolic vortex chamber near the front-end of the aircraft's main wing affixed to the swirl-vane vortex generators.

The aircraft of claim 7 wherein portions of the fuselage forming sides of the hyperbolic chamber or convergence zone at the forward end of the fuselage are formed into horizontally extending flaps pivotable about the leading edges of the swirl-vanes, vortex generating wing-lets thereof laterally outwardly from the fuselage.

A method of manufacturing the invention comprising the following steps:

Resin Transfer Molding (RTM) may be adopted for the fabrication process of the aircraft, spoiler or wing. The raw materials required for fabrication of the wing include selective compositions of ceramic material, plastics, Kevlar, glass fiber, carbon fiber in various forms such as chopped strand mat cloth, surface mat, woven roving and resin (epoxy & polyester), hardener, catalysts, accelerator, pigments, surface treatment agents, hand-shaped foam construction, hand laminated similar to surfboard building, C.N.C. machine cut and copy foam core hand laminations including wooden cores, injection molding or by any other method including metallurgy that is common, standard or otherwise accepted manufacturing practices used or applicable within the aircraft or automotive industries. All the basic raw materials including labor required for fabricating are available indigenously